

**EPA's Review of Revisions to Ohio's Designated Use Rule
OAC Chapter 3745-1-21, Great Miami River Basin,
Under Section 303(c) of the Clean Water Act
WQSTS # OH2014-506**

Date: 09 JAN 2015

I. Summary

A. Date received by EPA: September 26, 2014

B. Submittal History:

On May 28, 2014 the U.S. Environmental Protection Agency received from the Ohio Environmental Protection Agency (Ohio EPA) a proposed rule revision package containing use designation changes to Ohio Administrative Code Chapter 3745-1-21, Great Miami River drainage basin. Also included were two site-specific water quality criteria for copper.

These revised rules were adopted on May 6, 2014 and became effective September 1, 2014. This submission was incomplete until September 26, 2014 when EPA received a letter of certification from the Ohio Office of the Attorney General. Pursuant to Section 303(c)(3) of the Clean Water Act (CWA) and Federal regulations at 40 CFR 131.21, EPA is required to review and approve new and revised State water quality standards before they can become effective for Clean Water Act purposes.

C. Documents included in the submittal:

Ohio EPA 2014. Proposed revisions to Ohio Adm. Code 3745-1-21, Great Miami River Drainage Basin. Proposed February 21, 2014, Effective September 1, 2014.

Ohio EPA 2014. Fact Sheet. Proposed Rule – Surface Water Quality, Water Quality Standards Use designations OAC 3745-1-21. February 2014.

Ohio EPA 2014. Public Notice Proposed Rulemaking Governing Water Quality Standards Program. OAC Chapter 3745-1 Water Quality Standards 3745-1-21 Great Miami River drainage basin.

Ohio EPA 2014. Response to comments on draft rule. February 21, 2014.

Ohio Attorney General's certification letter, dated September 18, 2014.

D. Other supporting documents:

Ohio EPA 2012. Biological and water quality study of the Lower Great Miami River and select tributaries. Ohio EPA Technical Report EAS/2012-5-7.

US Environmental Protection Agency 2013. Biological Evaluation for Dissolved Oxygen, Temperature, pH and Cyanide, Revisions to Ohio Designated Uses. OAC Chapter 3745-1-09 Scioto River Basin, Received May 11, 2007.

US Fish and Wildlife Service 2010. Letter from Mary Knapp to Linda Holst dated September 17, 2010. FBI JUL 20

E. Description of Ohio's Action:

As part of its monitoring and assessment program, Ohio EPA routinely uses biological and habitat monitoring data to reassess the uses assigned to its surface waters and assign uses to waters not previously assessed. In this rule package Ohio has confirmed the warmwater habitat (WWH) aquatic life use designation and the primary contact recreation (PCR) use designation for nine stream segments previously assigned these designations prior to the availability of field data. These same designations are assigned to one additional segment that was previously undesignated. Additionally, two site-specific criteria for copper are being proposed, one for the Jackson Center WWTP in Shelby County and one for the Queens Acres WWTP in Butler County. This review document will only address the designated use assessments. Nine of the ten segments reviewed for use changes in this rule package resulted in no changes in those use designations, therefore EPA is taking no action on these nine segments because EPA only acts on new or revised water quality standards.

F. Basis of Action:

Ohio EPA reviewed the designated uses for selected waters in the Great Miami River basin to reflect monitoring data collected by Ohio EPA in 2010. Previously, these segments had not been monitored and nine of the ten segments were assigned use designations of WWH and PCR by Ohio EPA in 1978. Ohio use designations are defined in Rule 3745-1-07 of the Ohio Administrative Code. For aquatic life, surface waters are assigned to one of the following designated uses: "warmwater habitat" (WWH), "exceptional warmwater habitat" (EWH), "coldwater habitat (CWH), "modified warmwater habitat (MWH) and "limited resource water" (LRW). Based on these definitions, aquatic life designated uses of WWH, EWH, and CWH are consistent with the requirement of Section 101(a)(2) the Clean Water Act for the protection and propagation of fish, shellfish and wildlife, whereas MWH and LRW do not meet this requirement.

For recreational uses, surface waters are assigned to the "primary contact recreation" (PCR) designated use, or the "secondary contact recreation" (SCR) use where Ohio determines that primary contact recreation is not attainable. For recreational use, PCR meets the 101(a)(2) requirement for the provision of recreation in or on the water, whereas SCR is considered as not meeting the 101(a)(2) requirement. In addition, surface waters may be designated as public water supplies (PWS) where water is withdrawn for drinking. All surface waters are designated for agricultural water supply (AWS) and industrial water supply (IWS).

Aquatic life use designations are goals set for individual waterbodies based on the *potential* aquatic community that can realistically be sustained in light of regional reference conditions and how closely a waterbody may be restored to those reference conditions by the implementation of technology-based effluent limits on point sources and cost-effective and reasonable best management practices on nonpoint sources. Ohio EPA assesses this potential through the collection of biological and habitat data. Aquatic life uses are assigned to a waterbody based on a demonstrated potential in one of two ways (in order of importance):

- 1) attainment of biological criteria (IBI, ICI), or for coldwater systems the presence of coldwater organisms; or
- 2) a habitat assessment (QHEI) demonstrates the potential to attain an aquatic life use.

The assignment of aquatic life use designations is done according to the following rule:

EWB = fish and macroinvertebrates above EWB threshold for ecoregion, regardless of habitat assessment results; EWB for fish is an IBI score of ≥ 50 , for macroinvertebrates an ICI score of ≥ 46 .

CWB = presence of coldwater fish, macroinvertebrates, and/or other coldwater taxa.

WWB = habitat potential within WWB range regardless of biology; OR QHEI low but fish and/or macroinvertebrates above WWB threshold; WWB criterion for fish is IBI of ≥ 40 for the lower Great Miami River area; for macroinvertebrates is an ICI score of ≥ 30 -36 or a narrative of "good".

MWB = QHEI, fish and macroinvertebrates all within the MWB range (IBI 22 – 24, ICI 22 – 30 depending on ecoregion).

The Modified Warmwater (MWB) use designation is reserved for those streams that have been the subject of a use attainability analysis and have been found to be "incapable of supporting a balanced, integrated, adaptive community of warmwater organisms due to irretrievable modifications of the physical habitat" (OAC Chapter 3745-1-07(b)(1)(d)). Examples of streams where the MWB designation is applied include impoundments and streams that have been channelized. The MWB designation results in less restrictive criteria for ammonia and dissolved oxygen as compared with WWB. The LRW designation also results in less restrictive criteria for some pollutants; there are no LRW designations in this rule change package.

Criteria for recreational use designations are stated in Ohio EPA (2012): "Streams in the lower Great Miami River watershed are designated as primary contact recreation (PCR) or secondary contact recreation (SCR) use in OAC Rule 3745-1-21. SCR denotes waters with limited potential for pathogen exposure by dint of being shallow or exceedingly remote. Water bodies with a designated recreation use of PCR '...are suitable for one or more full-body contact recreation activities such as, but not limited to, wading,

swimming, boating, water skiing, canoeing, kayaking, and scuba diving' [OAC 3745-1-07 (B)(4)(b)].”

II. Area Affected and Environmental Impacts

A. Area Affected:

The area affected by the proposed rule changes is generally the length of each stream segment within the lower Great Miami River basin for which use designations are being proposed. This basin is shown in Figure 1. Figure 2 shows the streams for which use designations were assessed relative to the Great Miami River mainstem. Of these segments only Moss Creek is being treated as a water quality standard revision in this approval action given that this segment is the only segment with a use change (undesignated to WWH).

B. Environmental Impacts:

1. Aquatic Life

In this rule package Ohio EPA's assessment determined that the WWH aquatic life use designation is appropriate for ten segments. Nine of these segments were previously assigned WWH in 1978, and one segment was previously undesignated. The 2012 water quality report for the lower Great Miami River basin (Ohio EPA 2012) applies biological and habitat data to the determination of the appropriate aquatic life use for the first time for these ten segments.

To make a determination of compliance with the CWA, EPA staff reviewed monitoring results documented in the water quality report. For each individual use change segment, EPA assessed whether the monitoring results presented in the report supported the aquatic life use designation assigned by Ohio EPA in a manner consistent with the use designation assignment rule described previously. The results of this analysis are presented in Table 1.

2. Human Health

The only human health-related use designation assessments conducted in this rule package were those for the recreational use. EPA followed the procedure described under the aquatic life use section, and the results of the review for recreational uses are likewise presented in Table 1. The burden of supporting an SCR use designation is greater because this designation is not compliant with the CWA. In this rule package, the highest recreational use designation (PCR) is assigned to all segments in this rule package, thus providing assurance that all of these segments will be protected in a manner that is compliant with the CWA. This represents a confirmation of the previous designation of PCR on nine of ten segments, and an assignment of PCR to one previously undesignated segment.

III. CWA Sections 101(a)(2)/303(c)(2)/118(c)(2)/40 CFR 131 and 132 Review

A. EPA's authority under section 303(c)(2) of the CWA

Water quality standards requirements of CWA Sections 101(a)(2) and 303(c)(2) are implemented through federal regulations contained in 40 CFR 131. Federal regulations at 40 CFR 131.21 require EPA to review and approve or disapprove state-adopted water quality standards. In making this determination, EPA must consider the following requirements of 40 CFR 131.5:

- whether state-adopted uses are consistent with CWA requirements;
- whether the state has adopted criteria protective of the designated uses;
- whether the state has followed legal procedures for revising its standards;
- whether state standards are based on appropriate technical and scientific data and analyses; and
- whether the state's submission includes certain basic elements as specified in 40 CFR 131.6.

Section 101(a)(2) of the CWA specifies that designated uses "provide for the protection and propagation of fish, shellfish, and wildlife and provide for recreation in and on the water." Section 303(c)(2) of the CWA requires that standards shall protect the public health and shall take into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational, agricultural, industrial, and navigational purposes.

EPA is required to review and approve new and revised water quality standards submitted by States and Tribes. Possible EPA actions include:

- Approval (where EPA has concluded that approval of certain revisions will have no effect on listed species, or is otherwise not subject to ESA consultation);
- Approval subject to ESA consultation (where EPA has concluded that certain revisions may affect listed species (including beneficial effects));
- Disapproval (where EPA has concluded that certain revisions do not meet the requirements of the CWA or federal regulations and guidance); and
- No EPA action (where EPA has concluded that certain revisions are not revisions to the State's or Tribe's WQS and therefore do not need to be reviewed under Section 303(c) of the CWA.

Consistent with Federal regulations at 40 CFR 131.21, new or revised water quality standards do not become effective for CWA purposes until they are approved by EPA.

B. EPA's Review of Draft Rules

EPA reviewed the draft rule and sent to Ohio EPA a comment stating that data to support the use designation assessment for Owl Creek was not included in the water quality report for this use change package. The rule change for this segment was not an actual change in the use designations, rather it was a verification of previous WWH and PCR

designations. Ohio EPA responded that the Owl Creek verification was errantly listed as a rule change but that stream was not actually assessed, and Ohio EPA will make a correction in a future rulemaking to reflect that WWH was not verified with a survey.

Ohio EPA also received comments on the draft rule from the US Fish and Wildlife Service (FWS) prior to the official comment period. FWS encouraged Ohio EPA to adopt aquatic life use change and copper site-specific rules that are protective of freshwater mussels. The only comments on the draft rule that were received in writing during the comment period were from the Hamilton County Soil and Water Conservation District. Most of the comments submitted by Hamilton County focus on actions that might be taken to address impacts identified by Ohio in its monitoring and do not raise questions about any of Ohio's conclusions with respect to designated uses for any of the waters.

C. EPA's Review of Ohio EPA's Final Rules

EPA reviewed Ohio EPA's assessment of the appropriate designated use for the ten segments to ensure that the use determinations were consistent with Ohio's rules. The results from this review are presented in Table 1. Table 1 lists each stream segment for which use designations were assessed, along with US EPA's conclusion regarding whether the assessment was conducted in accordance with Ohio's water quality standards. Data presented in Ohio EPA 2012 support Ohio's determination that the appropriate aquatic life use designation for all ten segments in this rule package is WWH. All aquatic life use designations meet the CWA 101(a)(2) requirements. For the recreational use, PCR represents the highest possible use designation, thus all ten segments are fully protected for the recreational use and the recreational use designations all meet the CWA 101(a)(2) requirements.

It should be noted that Owl Creek was errantly listed as a rule change but that stream was not assessed, so the rule will need to be updated to reflect a change back to its former status (WWH, PCR by default). EPA is taking no action on Owl Creek because there is no change in the water quality standards that apply to Owl Creek from a CWA perspective.

1. Review of Submittal for Completeness

Regulatory Requirement:	Ohio EPA Rule Submittal:
Use designations consistent with the provisions of section 101(a)(2) and 303(c)(2) of the Act (40 CFR 131.6(a) and 131.10(a).	Confirmed.
Methods used and analyses conducted to support WQS revisions (40 CFR 131.6(b))	As documented above, and in Table 1, appropriate methods were used to assign designated uses.
Water quality criteria sufficient to protect the designated uses of Ohio surface waters (40 CFR 131.6(c))	Confirmed.
An antidegradation policy consistent with §131.12 (40 CFR 131.6(d))	Not applicable, no changes made to antidegradation policy.
Certification by the State Attorney General or other appropriate legal authority within the State that the WQS were duly adopted pursuant to State law. (40 CFR 131.6(e))	Certification by Ohio Attorney General Mike DeWine received on September 26, 2014.
General information which will aid the Agency in determining the adequacy of the scientific basis of the standards which do not include uses specified in section 101(a)(2) of the Act as well as information on general policies applicable to State standards which their application and implementation. (40 CFR 131.6(f))	All designated uses adopted in this rule package are consistent with Section 101(a)(2). Ohio's EPA-approved biological criteria may be found in Ohio's water quality standards at OAC 3745-1-07. The technical basis for Ohio's biological criteria is contained in: http://www.epa.ohio.gov/dsw/bioassess/BioCriteriaProtAqLife.aspx . Ohio's methods for conducting surface water assessments are "Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)/ Ohio EPA Division of Surface Water, June, 2006. The data and analysis which support the use designations adopted in this rule package are available online at: http://www.epa.ohio.gov/portals/35/documents/GMR2012TSD.pdf

2. Ohio EPA's responses to EPA's comments on draft rules

Refer to Section IIIB. As indicated previously, Owl Creek was errantly listed as a rule change but that stream was not assessed; EPA is thus taking no action on this change as it is in error. Ohio EPA staff has confirmed that this segment will be changed back to its former status as unassessed, with WWH and PCR remaining in place based on the 1978 water quality standards. This error does not affect the applicable water quality standards for this segment, it only restores the status of this segment as not assessed.

3. EPA action on the final rule revisions submitted by Ohio EPA

Citation for new or revised rule: Ohio Administrative Code, Chapter 3745-1-21.

Summary of new or revised rule:

The new rule confirms the previous WWH aquatic life designated use and PCR recreational use designations for nine stream segments in the lower Great Miami River basin. The rule also adds WWH and PCR designations for one stream segment that was previously undesignated, Moss Creek. Finally, the rule adds site-specific copper criteria for two streams, one which receives effluent from the Jackson Center WWTP and one which receives effluent from the Butler County Queens Acres WWTP. The two site-specific copper criteria are being addressed in a separate review.

EPA Action: As indicated, EPA is acting on only one segment, Moss Creek; this segment is the only use change segment in this rule package. Based on our review, we have determined that the proposed use designations of WWH and PCR for Moss Creek are consistent with the water quality standards requirements of CWA Sections 101(a)(2) and 303(c)(2) and the implementing regulations at 40CFR131. EPA approves the use changes for Moss Creek. Additionally, EPA is currently reviewing the documentation provided in support of two site-specific criteria for copper but this analysis is incomplete and therefore EPA is taking no action on the two copper SSCs at this time.

IV. Endangered Species Act (ESA) Requirements

As indicated, only Moss Creek is being treated as a water quality standard revision in this approval action given that this segment is the only segment with a use change. Moss Creek thus defines the action area.

EPA reviewed the distribution of all federally-listed endangered and threatened species in Ohio and determined that the Indiana bat and the rayed bean were the only two listed species in the action area of Moss Creek. The aquatic life use change for this segment is from undesignated to WWH. Because Ohio EPA water quality standards apply the WWH chemical criteria to all undesignated streams by default, the formal assignment of WWH to the previously-undesignated Moss Creek does not change the chemical water quality criteria that are applicable to the creek. Since the action will not affect the level of protection afforded to Moss Creek, EPA's action will have **no effect on the Indiana bat** for Moss Creek. Further, FWS in September 2010 concurred with EPA's determination that WWH water quality criteria (FWS 2010), which are applicable in Moss Creek, are not likely to adversely affect the bat (see also EPA's previous biological evaluation of other designated use changes in Ohio).

For Moss Creek, the distance from the end of the use designation segment (at the mouth of the creek) to the Great Miami River where the rayed bean mussel is potentially present is nine miles. Previous analysis of Ohio EPA water quality data by Region 5 staff (EPA 2013) has demonstrated that concentrations of water constituents potentially affected by

use changes (including ammonia, dissolved oxygen, pH, and temperature) decline as the water travels downstream due to assimilation and transformation, such that water quality returns to background concentrations in less than 10 miles. Further, concentrations of pollutants can decline when diluted by confluence with other waters that have lower pollutant concentrations. For Moss Creek, EPA's action is expected to have no effect on rayed bean mussels that may be present nine miles downstream from the segment in the Great Miami River, as nine miles provides ample time for chemical constituents to be assimilated, transformed, and diluted. For Moss Creek, mixing and dilution over this distance is enhanced by the confluence with two other waterbodies as the waters of Moss Creek flow toward the Great Miami River, first the North Branch of Wolf Creek and then Wolf Creek. Combined with the fact that the chemical criteria that are applicable to this creek have not changed as a result of the WWH designation, the assignment of WWH to Moss Creek will have **no effect on the rayed bean**.

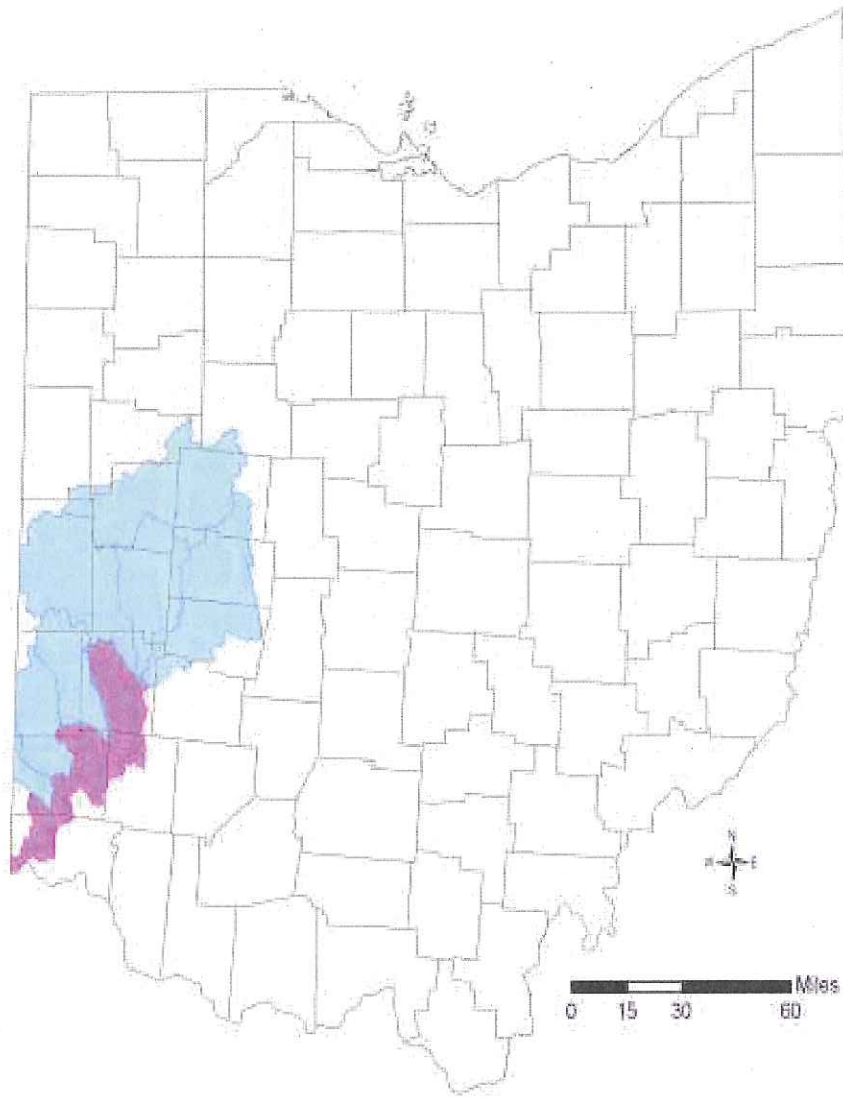


Figure 1. Great Miami River Basin (blue shade) and 2010 lower Great Miami River study area (purple shade). Source: Ohio EPA 2014.

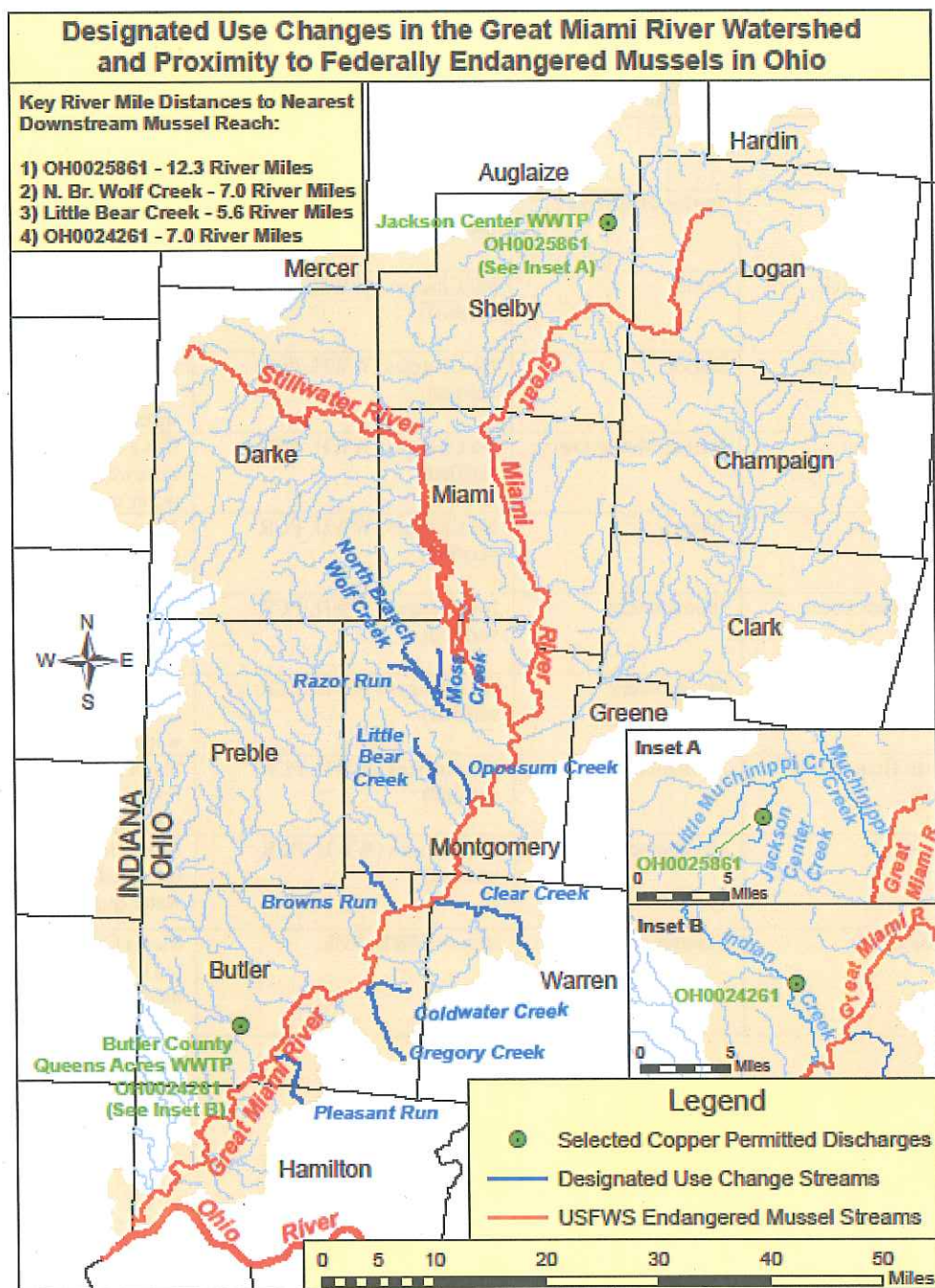


Figure 2. Stream segments for proposed use changes and two site-specific copper criteria in the lower Great Miami River study area. Source: US EPA 2014.

Table 1. Aquatic life and recreation use designation revisions to OAC Chapter 3745-1-21, Great Miami River Basin, submitted by Ohio EPA on February 21, 2014, and U.S. EPA Clean Water Act determinations.

Waterbody Name	County	Changes	CWA Determination
Owl Creek	Hamilton	No Changes (WWH, PCR verified)	Verification of existing uses made in error by Ohio EPA, no change to applicable WQS. EPA is taking no action.
Pleasant Run	Butler, Hamilton	No Changes (WWH, PCR verified)	Not a change to WQS. EPA reviewed the data presented in the water quality report.
Gregory Creek	Butler	No Changes (WWH, PCR verified)	Not a change to WQS. EPA reviewed the data presented in the water quality report.
Coldwater Creek	Butler	No Changes (WWH, PCR verified)	Not a change to WQS. EPA reviewed the data presented in the water quality report.
Browns Run	Butler, Montgomery	No Changes (WWH, PCR verified)	Not a change to WQS. EPA reviewed the data presented in the water quality report.
Clear Creek	Warren	No Changes (WWH, PCR verified)	Not a change to WQS. EPA reviewed the data presented in the water quality report.
Little Bear Creek	Montgomery	No Changes (WWH, PCR verified)	Not a change to WQS. EPA reviewed the data presented in the water quality report.
Oppossum Creek	Montgomery	No Changes (WWH, PCR verified)	Not a change to WQS. EPA reviewed the data presented in the water quality report.
North Branch Wolf Creek	Montgomery	No Changes (WWH, PCR verified)	Not a change to WQS. EPA reviewed the data presented in the water quality report.
Razor Run	Montgomery	No Changes (WWH, PCR verified)	Not a change to WQS. EPA reviewed the data presented in the water quality report.
Moss Creek	Montgomery	None> WWH, PCR	Meets CWA requirements (131.10(a)). Fish and macroinvertebrates very good. PCR meets CWA 101(a)(2).